

REMARKS

The following remarks are believed responsive to the points raised by the Office Action dated August 18, 2004. In view of these remarks, reconsideration is respectfully requested.

The Pending Claims

Claims 1-13, 15-22, and 31-34 remain pending.

The Office Action

Claims 1-13, 15-22, and 31-34 were rejected under 35 U.S.C. §103(a) as being unpatentable over European Patent Application Publication No. 0,267,286 A1 (hereinafter referred to as "EP '286"), in view of European Patent Application Publication No. 0,630,675 A1 (hereinafter referred to as "EP '675") in view of U.S. Patent No. 5,547,576 to Onishi et al. (hereinafter referred to as "Onishi et al."). This rejection is respectfully traversed.

Applicants respectfully submit that the Office has failed to establish a *prima facie* case of obviousness in regard to the present invention. The present invention relates to a filter that *inter alia*, minimizes the passage of platelets therethrough. EP '286 emphasizes that the disclosed filter "hold[s] down the loss of platelets to a minimum" (page 6, lines 9-10), i.e., the filter allows platelets to pass therethrough. Thus, one would not be led from the platelet-passing filter of EP '286 to produce a filter that minimizes the passage of platelets therethrough. Additionally, EP '675 discloses a filter for separating leukocytes, and separating leukocytes and platelets, and Onishi et al. discloses a filter for removing pathogenic substances (defined as leukocytes, platelets, and viruses) from a protein containing solution. One of ordinary skill in the art would not be led from the platelet-passing filter of EP '286 to the filter of EP '675 and the platelet-removing filter of Onishi et al.

Moreover, as explained below, even if somehow one could be led from the teachings of EP '286 to EP '675 and Onishi et al., there is no teaching or suggestion in these disclosures leading one to the presently claimed invention.

EP '286 merely discloses a platelet-passing filter element, comprising a plurality of fibers, each comprising a body portion and a peripheral surface portion, each containing nonionic hydrophilic groups and nitrogen-containing basic functional groups at least in the peripheral surface portion, the peripheral surface portion having a basic nitrogen atom content of from 0.2 to 4.0% by weight (page 8, lines 5-13). There is no disclosure or suggestion anywhere in the specification (that includes Examples 1-11 and Comparative Examples 1-7), of a filter including at least two fibrous filter elements wherein the surface of

one filter element is substantially non-hydroxylated and has a nitrogen-to-oxygen ratio in the range of from at least 0.01 to less than about 1.00, and the surface of the other filter element is hydroxylated relative to the bulk of the element. There is also no disclosure or suggestion anywhere in the specification of EP '286 of a filter comprising at least two fibrous filter elements wherein the surface of one filter element is substantially non-hydroxylated and has a greater number of carboxyl groups relative to the bulk of the element and the surface of the other filter element is hydroxylated relative to the bulk of the element.

EP '675 merely discloses three-dimensionally reticular porous members according to the invention are treated by cationic treatment and surfactant treatment (e.g., page 5, lines 9-10; page 6, line 16). Cationic treatment is defined at page 5, lines 9-18, and exemplary surfactants are described at page 6, lines 23-25. There is no teaching in EP '675 of cationic treatment or surfactant treatment of fibrous filter elements, and one would not be led from cationic treatment or surfactant treatment of three-dimensionally reticular porous members to such treatment of fibrous filter elements.

Again, as with the disclosure of EP '286 (that teaches a platelet passing filter) there is no disclosure or suggestion anywhere in the EP '675 specification (that includes Examples 1-10 and Comparative Examples 1-7), of a filter including at least two elements wherein the surface of one filter element is substantially non-hydroxylated and has a nitrogen-to-oxygen ratio in the range of from at least 0.01 to less than about 1.00, and the surface of the other filter element is hydroxylated relative to the bulk of the element. There is also no disclosure or suggestion anywhere in the specification of EP '675 of a filter comprising at least two fibrous filter elements wherein the surface of one filter element is substantially non-hydroxylated and has a greater number of carboxyl groups relative to the bulk of the element and the surface of the other filter element is hydroxylated relative to the bulk of the element.

Moreover, while the Office Action acknowledges that EP '675 does not explicitly teach that the three-dimensionally reticular porous member includes nitrogen and oxygen, the Office Action merely states the disclosed treatment "would give both N and O on the surface." The Office Action does not explain either why the three-dimensionally reticular porous member disclosed in EP '675 has a nitrogen-to-oxygen ratio in the range of from at least 0.01 to less than about 1.00, or why one of ordinary skill in the art would be led to such a ratio. For this additional reason, the Office has failed to establish a *prima facie* case of obviousness in regard to the present invention.

The fact that Onishi et al. in Example 6 immobilizes polyethyleneimine on a membrane is of no import. Onishi et al. discloses a platelet-removing filter (the antithesis of the EP '286 platelet-passing filter), and Example 6 reinforces Onishi's preference for membranes rather than

fibrous media. Onishi et al. simply does not cure the deficiencies of EP '286 and EP '675, and therefore, the combination also fails to render the present invention obvious.

Additionally, since EP '286 teaches fibrous platelet-passing filters, EP '675 teaches treating three-dimensionally reticular porous members, and Onishi et al. emphasizes treating membranes for removing platelets, one would not be led to a platelet removing filter according to the present invention, i.e., comprising at least two fibrous elements, each having the specified surface characteristics.

With respect to claim 5, there is no suggestion in EP '286, EP '675 and/or Onishi et al. of the claimed alternating arrangement of elements. While the Office Action has cited *In re Japikse*, 86 USPQ 70 (CCPA, 1950) and *In re Kuhle*, 188 USPQ 7 (CCPA, 1975) and referred to a "mere reversal of parts" and a "rearrangement of parts," those cases merely stand for the unremarkable proposition that the movement of a starting switch to a different position, and the particular placement of a electrical contact, are modifications known in a known process. For the reasons set forth above, the claimed invention is novel and non-obvious, and furthermore, interposing a fibrous filter element having a hydroxylated surface between two fibrous filter elements having surfaces including the nitrogen-to-oxygen ratio in the range of from at least 0.01 to less than about 1.00 is not a modification known in the art. Applicants are entitled to submit separate claims encompassing separate arrangements of elements, and the Office Action has failed to establish a *prima facie* case of obviousness in regard to the claimed invention.

The dependent claims are also allowable, as they depend from the novel and non-obvious independent claims. Additionally, while the Official Action again states the zeta potential and CWST would be similar for similar materials, the Official Action does not explain why this is so, and, even if the Official Action explained what "similar" materials are, for the reasons set forth above, the Office Action has failed to establish a *prima facie* case of obviousness in regard to the claimed invention, and has not shown the cited art discloses "similar materials." Illustratively, EP '675 does not provide sufficient information to determine a N/O ratio, and it teaches a "cationic treatment" and refers to "maintaining a positive charge of the filter for a long period of time" (page 5, lines 9-18), which would appear to provide a positive zeta potential at physiological pH.

For the reasons set forth above, reconsideration of the rejection is respectfully requested.

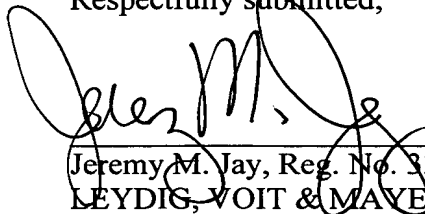
Conclusion

In view of the amendment and remarks recited herein, the application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue.

In re Appln. of BORMANN et al.
Application No. 09/936,732

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeremy M. Jay", is written over a horizontal line.

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